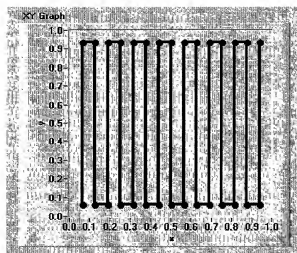


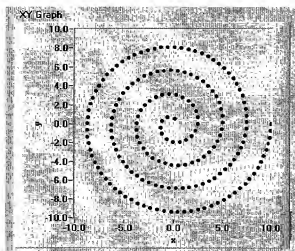
Approximated Peano Curve. The space-filling process has not been completed.

Figure 1A (Prior Art)



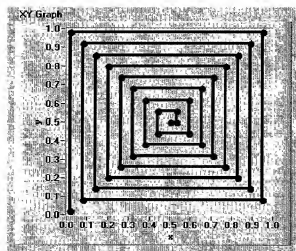
Boustrophedon Path

Figure 1B (Prior Art)



Archimedes Spiral defined by equally distributed points

Figure 1C (Prior Art)



Spiral-like line-based scanning

Figure 1D (Prior Art)

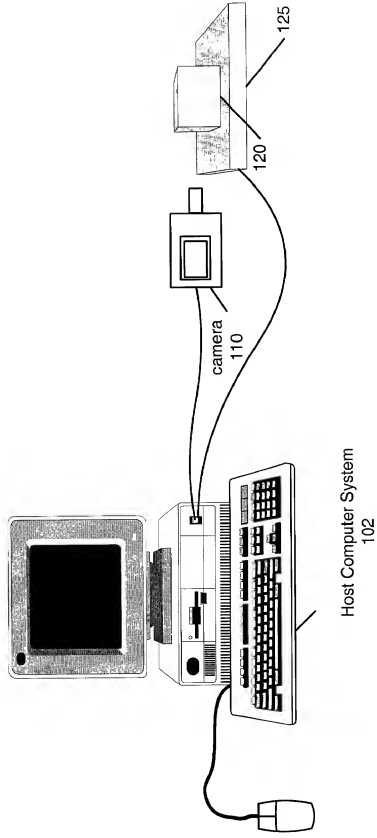


Figure 2A

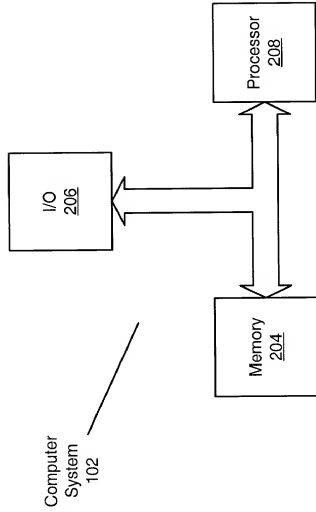


Figure 2B

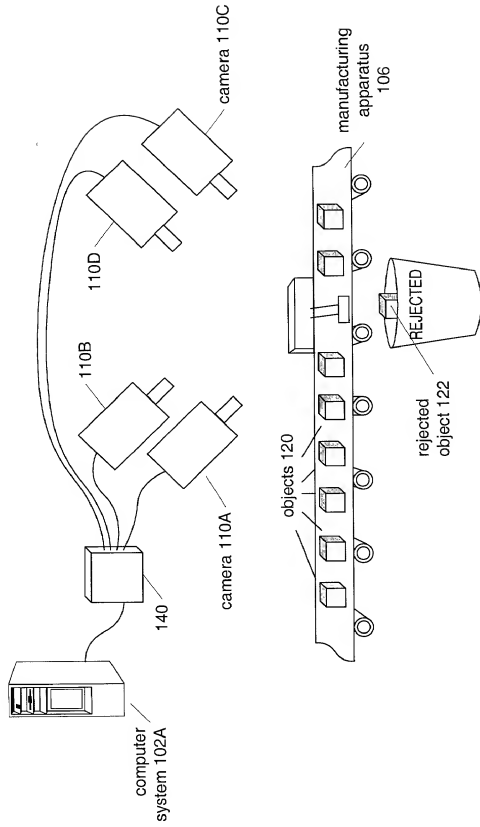


Figure 3A

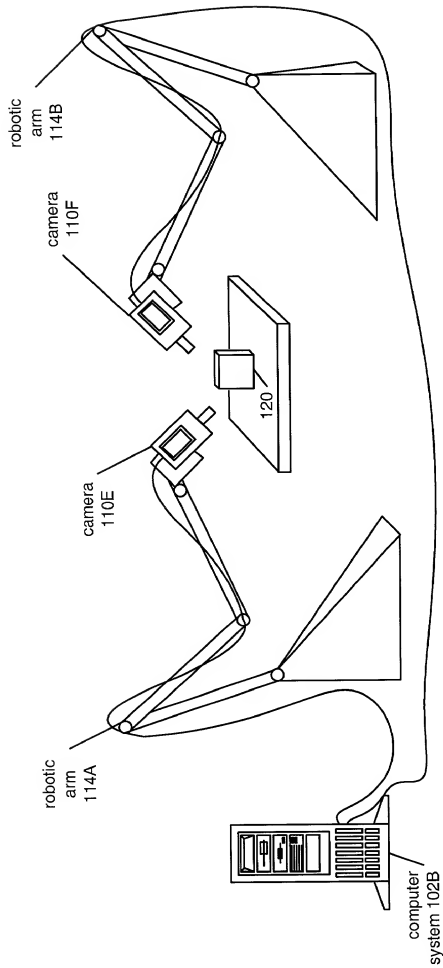


Figure 3B

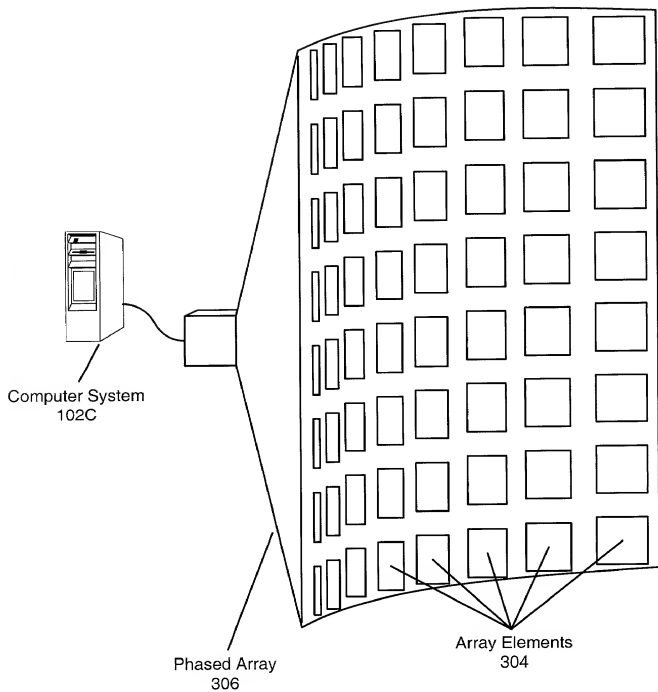


Figure 3C

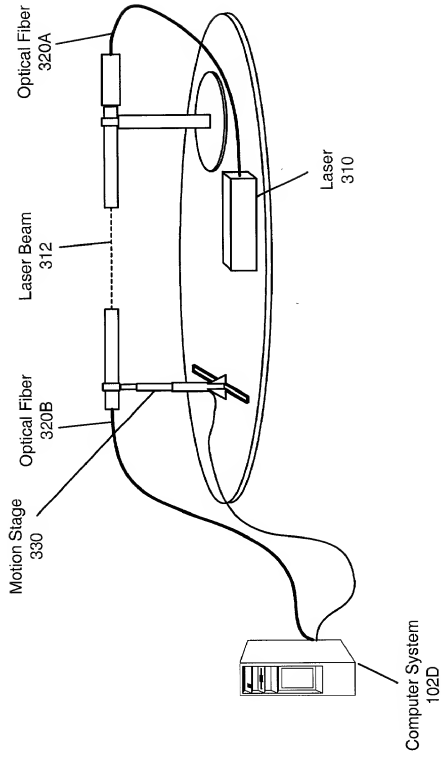
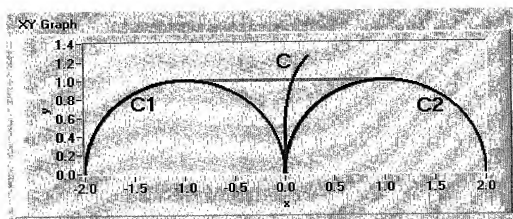


Figure 3D



The situation of Lemma 1

Figure 4A

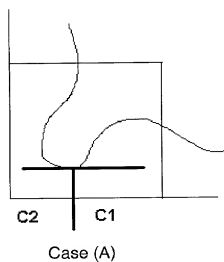


Figure 4B

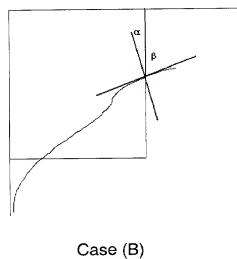
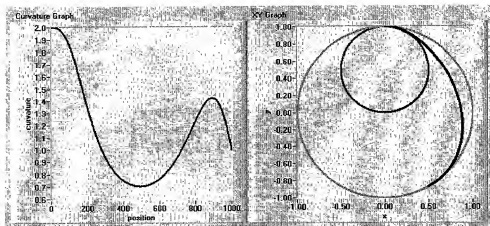


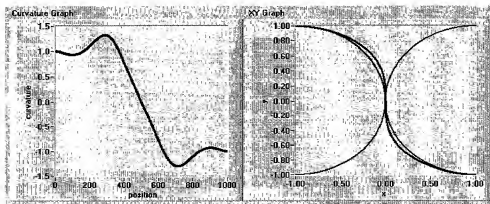
Figure 4C





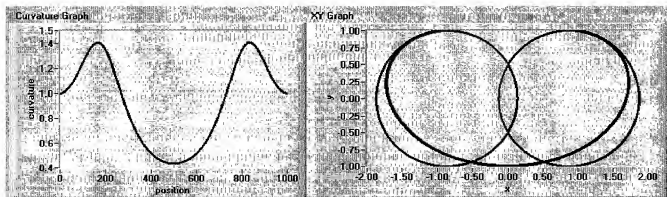
Smooth transition between two circles of different radii.

Figure 4D



Smooth transition between two circles of same radius.

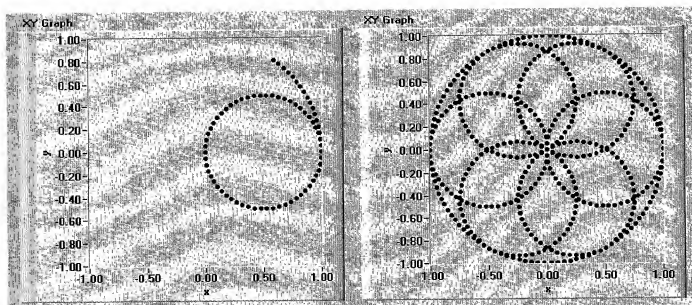
Figure 4E



Transition between two unit circles of radius 1. The distance between the circles is  $\sqrt{3}$

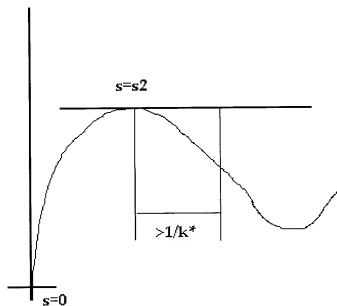
Figure 4F

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Beginning (left) and completion (right) of a scanning scheme where the curvature is below a certain value

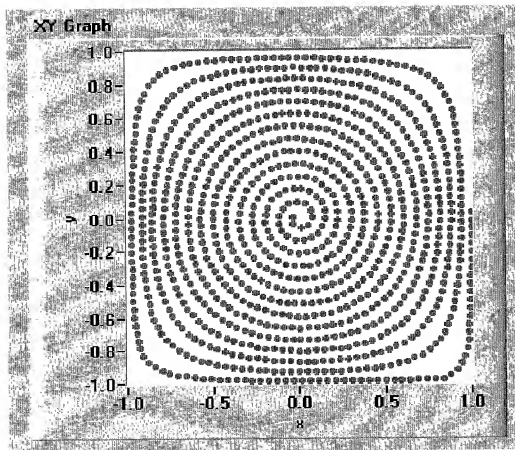
Figure 5A



Construction of  $s_2$  and the subsequent part of the curve

Figure 5B

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Conformal Spiral.

Figure 6

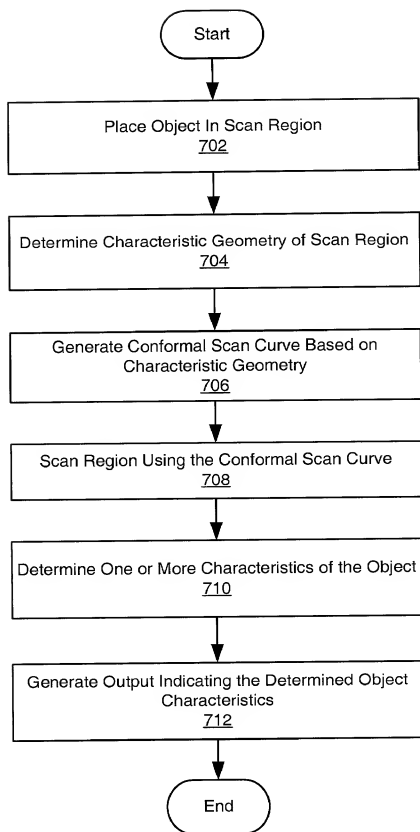
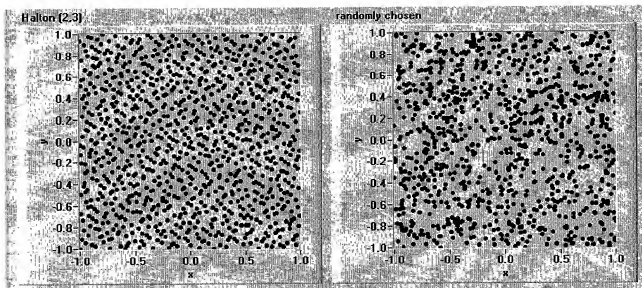


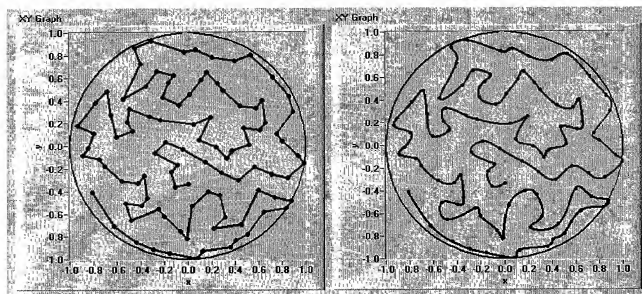
Figure 07

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The first 1000 Halton points (left) and randomly chosen points (right)

Figure 8A



Original solution (left) and splined version (right).

Figure 8B

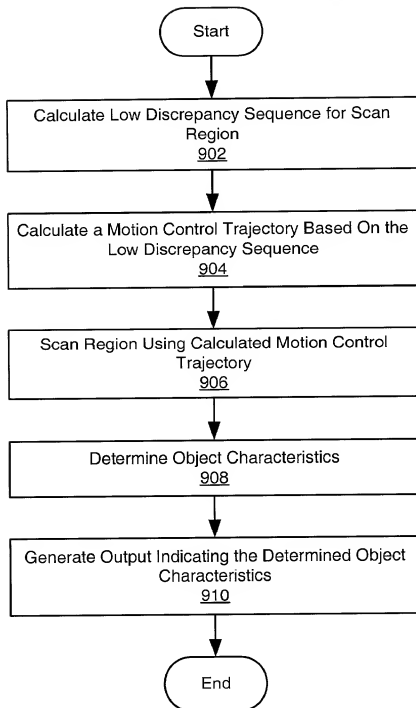
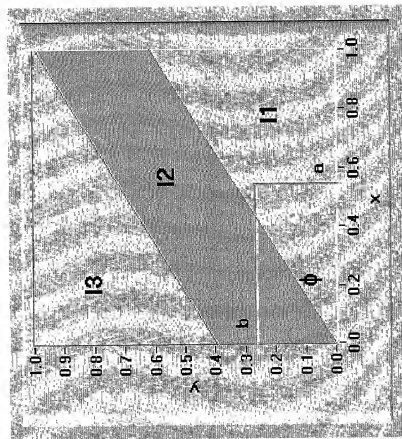


Figure 9



Definition of  $I_1$ ,  $I_2$ , and  $I_3$

Figure 10

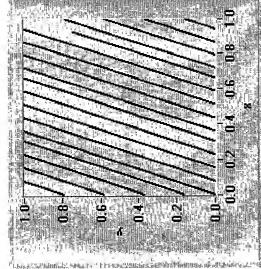


Figure 11A

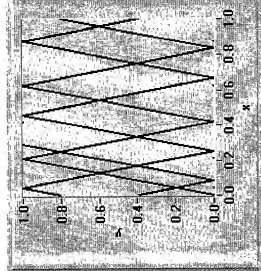


Figure 11B

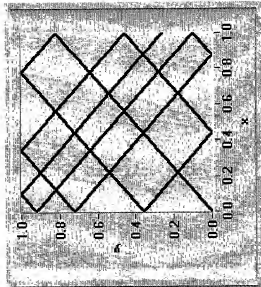


Figure 11C



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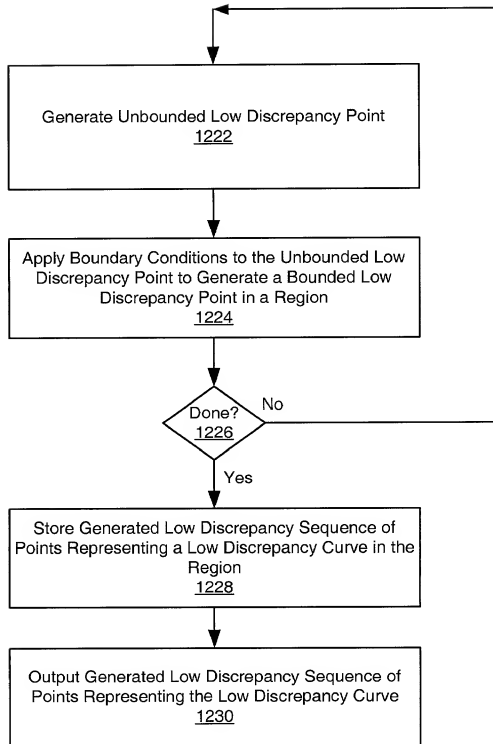


Figure 12A

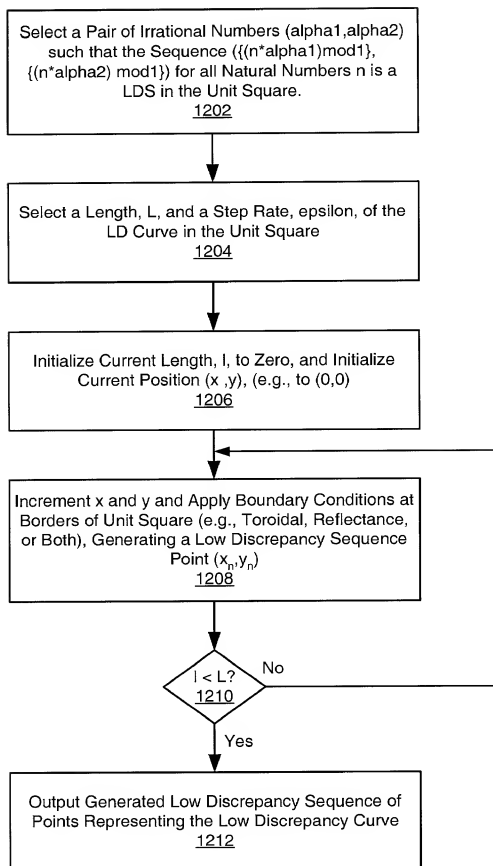
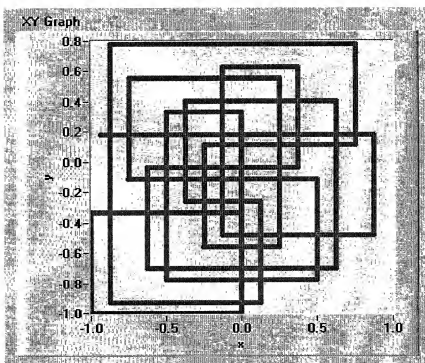
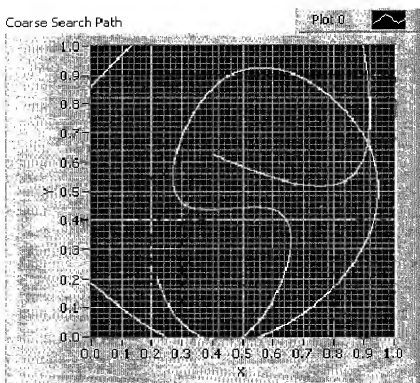


Figure 12B



Beginning of a Low Discrepancy Curve based on a specific Halton Sequence in 2d

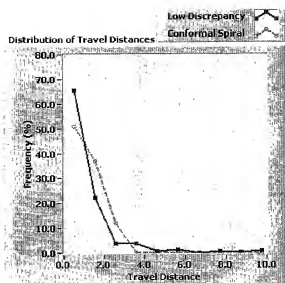
Figure 13A



Splined Low Discrepancy Curve coarse search

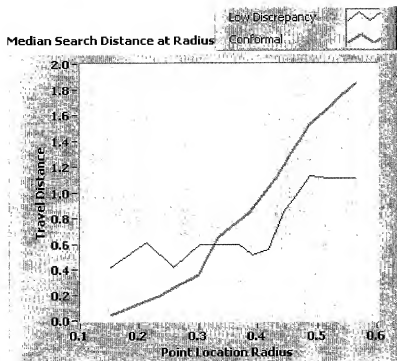
Figure 13B

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Comparison of Conformal Spiral and Low Discrepancy Searching

Figure 13C



Comparison of Travel Distance for Low Discrepancy Search and Conformal Spiral Search

Figure 13D

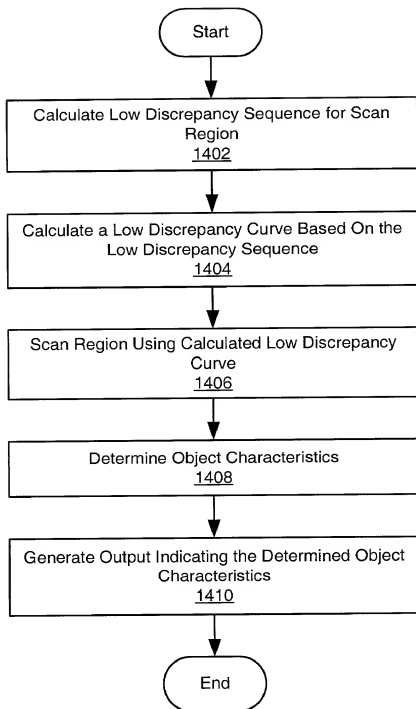
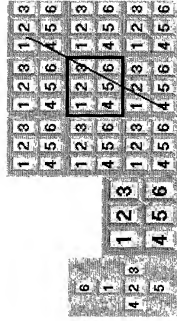


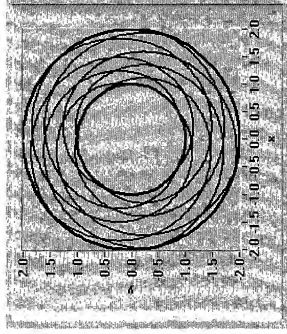
Figure 14

108090\*41E77860



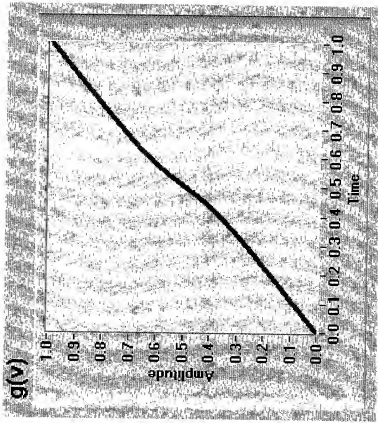
Tiling of the plane and relation to the surface of the unit cube

Figure 15A



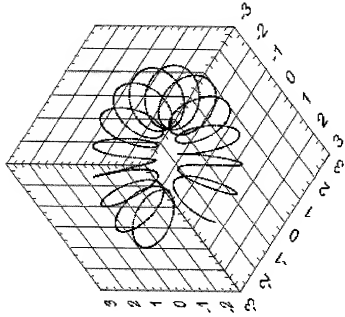
Low-discrepancy curve in a ring

Figure 15B



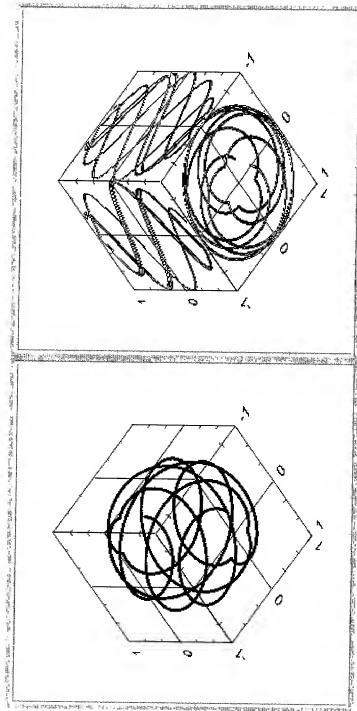
Low Discrepancy Preserving Mapping Function

Figure 15C



Low-discrepancy curve filling the surface of a torus

Figure 15D



Low-discrepancy curve on a sphere  
(left) and projections (right)

Figure 16



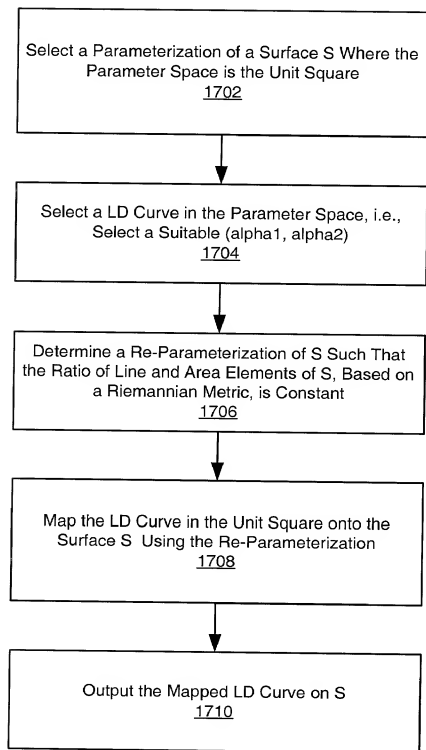
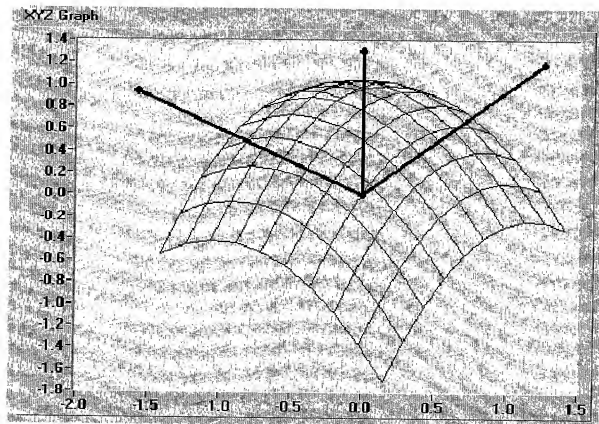


Figure 17

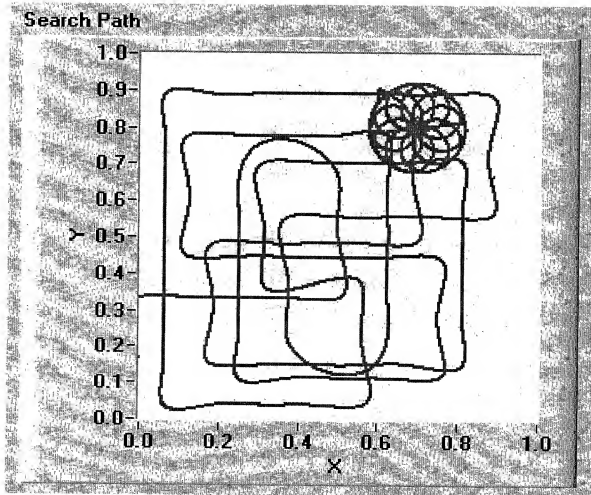
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Surfaces can be scanned efficiently when the term low discrepancy sequence/ curve can be generalized, e.g. based on metrics on the surface.

Figure 18

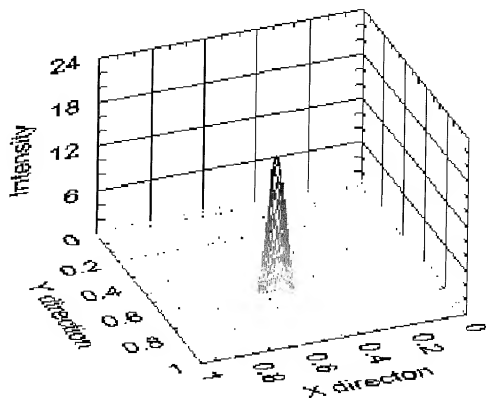
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Splined Low Discrepancy Curve coarse search with refined final approach

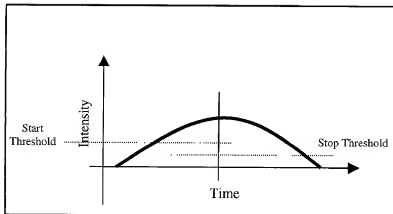
Figure 19

### Intensity Field Distribution in Search Area



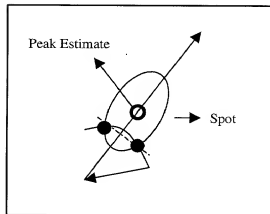
Beam intensity distribution in search area

Figure 20



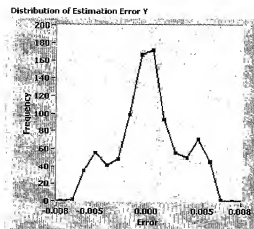
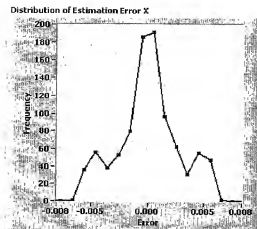
Location of the Peak

Figure 21A



Initial Final Approach Move

Figure 21B



Error distribution of the estimated peak X coordinate error (left) and Y coordinate error (right)

Figure 21C

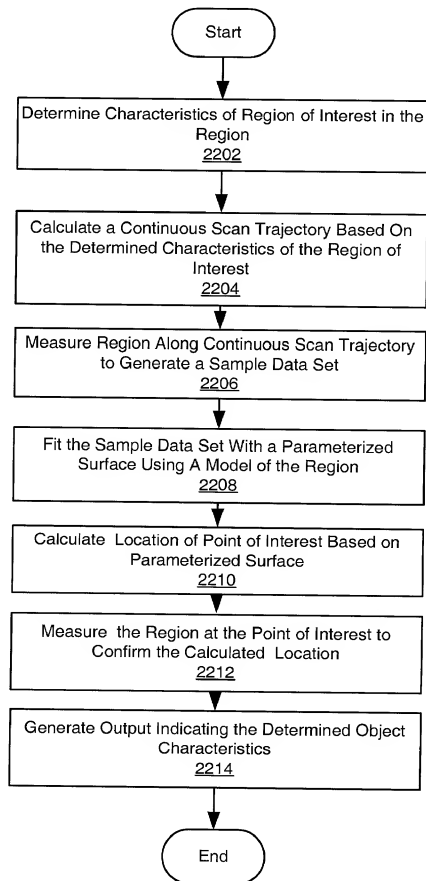


Figure 22

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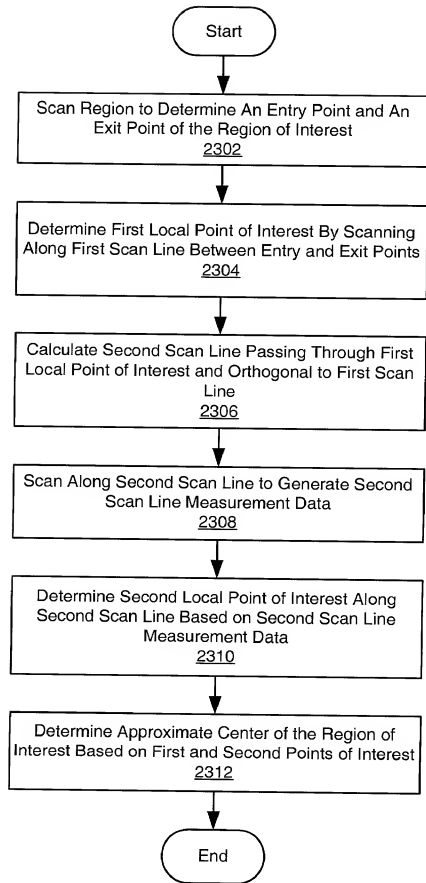


Figure 23